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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,945	09/19/2003	Daniel S. Eichorn	DP-308644	7095
22851	7590	08/01/2005	EXAMINER	
DELPHI TECHNOLOGIES, INC.			VU, HIEN D	
M/C 480-410-202			ART UNIT	
PO BOX 5052			PAPER NUMBER	
TROY, MI 48007			2833	

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,945

Applicant(s)

EICHORN ET AL.

Examiner

Hien D. Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-25 is/are pending in the application.
- 4a) Of the above claim(s) 12-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy et al in view of Vicih et al.

Claims recited method steps of forming an electrical connection corresponding to the rejection as follows. McCoy, figs. 2, 3, 6-9, show a circuit board substrate 20 having a first surface and a second surface, a through hole 34, a first conductive pad 51 disposed on the first surface, a conductive terminal 31 having a first end and a second end exposed from the first and second surfaces and a conductive bonding agent 57. McCoy does show the conductive bonding agent on the first conductive pad being spaced apart from the through hole. Vicih, fig. 3 shows, a conductive bonding agent 32 being spaced apart from a through hole 365. It would have been obvious to one with skill in the art to modify the connector of McCoy by forming the conductive bonding agent to be spaced apart from the through hole, as taught by Vicih, in order to provide better solder technique and more reliable.

As to claim 21, the conductive bonding agent comprises solder.

As to claim 22, the bonding agent flows through the hole and connects the terminal 31 with a second conductive pad on the second surface of the second surface of the circuit board (not shown).

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As to claim 23, the step of placing a stencil over the through hole prior to the step of placing a conductive bonding agent is old and well known in the art as disclosed in the specification, therefore it would have been obvious to use such step in the connector of McCoy, in order to achieve better connection for the conductive terminal.

As to claim 24, in absence of any showing of criticality by the applicant, to form the first and second ends to be extended at least 2mm beyond the first and second surface of the circuit board would have been an obvious of modification since such change solves no stated problem.

As to claim 25, a conductive plating (not labeled) in the through hole and being electrically connected with the bonding agent.

3. Applicant's arguments with respect to claims 20-25 are have been considered but are moot in view of the new ground(s) of rejection.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication should be directed to Hein D. Vu at telephone number (571) 272-2016.

Vu/ds

07/12/05

A handwritten signature in black ink, appearing to read "Hienvu", written in a cursive style.

HIENVU
PRIMARY EXAMINER